

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	47,431	66,205	55,794	47,157	92,588	125,510	109,417	Continuing	TBD
4810 Avionics Midlife Improvement (AMI)	35,625	37,607	33,197	29,663	5,642	4,493	247	Continuing	TBD
4875 Situational Awareness Defensive Improvement	11,806	28,598	22,597	0	0	0	0	0	70,925
4876 B-52 Global Air Traffic Management (GATM)	0	0	0	0	22,639	32,790	0	Continuing	TBD
5039 B-52 Modernization	0	0	0	17,494	64,307	88,227	109,170	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD
<p>(U) <u>A. Mission Description</u></p> <p>The B-52 is the primary nuclear rolled bomber in the USAF inventory. It provides the only Air Launched Cruise Missile carriage in the USAF. The B-52 also provides theater CINCs with a long range strike capability. The current service life of the aircraft extends to 2040. The B-52's Avionics Midlife Improvement (AMI) program replaces unsupportable mission critical parts of the Offensive Avionics System that control navigation and weapons delivery on the B-52. Situational Awareness Defensive Improvement (SADI) program improves supportability, increases memory, allows reprogrammability, and adds a new display for improved situational awareness and system control. Global Air Traffic Management (GATM) avionics upgrades reduce airspace congestion, increase safety, and cost savings through more efficient flight routes and altitudes. B-52 Modernization provides communications upgrades for enhanced command and control, an inflight Convention Air Launch Cruise Missile mission planning system, and increased carriage of GPS guided gravity and standoff weapons. The B-52 program management is provided by Air Force Material Command's Oklahoma Air Logistics Center. The prime contractor for these projects is Boeing, McDonnell Defense in Wichita, Kansas.</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is in budget activity 7 - Operational System Development, because it supports a currently operational system.</p>									

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07 - Operational System Development**0101113F B-52 SQUADRONS**(U) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget	50,321	66,874	41,820	TBD
(U) Appropriated Value	50,787	66,874		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-625	-669		
b. Small Business Innovative Research	-1,766			
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogram				
e. Rescissions	-466			
(U) Adjustments to Budget Years Since FY 2002 PBR	-499		13,974	
(U) Current Budget Submit/FY 2003 PBR	47,431	66,205	55,794	TBD

(U) **Significant Program Changes:**

(U) FY01 number includes approximately \$12.0M for the Situational Awareness Defensive Improvement (SADI) program. The EMD schedule will lengthen by at least three months.

(U) FY03 was increased to perform ground and flight testing for Avionics Midlife Improvement (AMI) and Situational Awareness Defensive Improvement (SADI)

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS				PROJECT 4810	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4810 Avionics Midlife Improvement (AMI)	35,625	37,607	33,197	29,663	5,642	4,493	247	Continuing	TBD
<p>(U) <u>A. Mission Description</u> The current B-52H Offensive Avionics System (OAS) contains several subsystems which must be replaced. The Inertial Navigation System (INS) includes a spinning mass gyro based on 1960's technology which will soon be unsupportable. The Avionics Control Unit (ACU) is an aging computer system with limited processing capability and memory. The Data Transfer Unit Cartridges (DTUCs) are bulky, unreliable, and based on old technology. The AMI program will use existing technology to replace these systems and the associated software, significantly increasing OAS reliability, maintainability, supportability, and capability while reducing operating costs.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$33,922 Design and development of replacement software (U) \$1,703 Ground and flight test (U) \$35,625 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$35,807 Design, development of replacement software (U) \$1,800 Ground and Flight Test (U) \$37,607 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u> (U) \$25,847 Design, development of replacement software (U) \$7,350 Ground and Flight Test (U) \$33,197 Total</p> <p>(U) <u>B. Project Change Summary</u> The EMD contract was awarded on 23 December 1999</p>									
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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS				PROJECT 4810	
(U) C. Other Program Funding Summary (\$ in Thousands)									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN									
(U) Aircraft Procurement (BP1100)		0	0	17,036	33,816	32,253	3,100	850	87,055
(U) D. Acquisition Strategy									
The AMI program will contract with Boeing Wichita for aircraft hardware integration and Flight Management System and the Stores Management Overlay software development. Specific vendors will be selected to provide hardware for use during EMD. The Government will contract with these vendors for production hardware to support aircraft installations.									
(U) E. Schedule Profile									
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1
(U) Contract Award/Modifications	*	*	*	*	*	X	X	X	X
(U) Interface Development	*								
(U) Software Development	*	*	*	*	*	X			
(U) Test Planning	*	*	*	*	*				
(U) Group A Design	*								
(U) Group A Fabrication	*	*	*	*	*	X	X		
(U) Trial Install						X	X	X	
(U) Ground & Flight Test							X	X	X
(U) Milestone III Decision									X
(U) Program Office Support	*	*	*	*	*	X	X	X	X
Project 4810									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
07 - Operational System Development					0101113F B-52 SQUADRONS				4810	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
						<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>		
(U)	Prototype Hardware					3,659	2,196	4,253		
(U)	Non-recurring Engineering					24,950	31,450	19,619		
(U)	Ground/Flight Test					2,425	1,800	7,350		
(U)	System Program Office Support					2,230	1,776	1,725		
(U)	Miscellaneous					2,361	385	250		
(U)	Total					35,625	37,607	33,197		
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing, Wichita	CONTRACT	FY01	109,100	109,100	26,670	26,909	31,450	19,619	Continuing	TBD
<u>Support and Management Organizations</u>										
OC-ALC/LH	PMA	FY01	180	180	538	2,130	2,422	3,478	Continuing	TBD
OC-ALC/LAS	206	FY01	400	400	400	1,500	1,435	2,250	Continuing	TBD
OO-ALC/LIR	616	Aug 01	100	100	100	100	200	200	Continuing	TBD
SER/CASU	MIPR	Aug 01	100	100	100	200	300	300	Continuing	TBD
Miscellaneous	BTR/SIBR	Oct 00				2,361				2,361
<u>Test and Evaluation Organizations</u>										
419 FLTS	Project Order	Aug 01	30	30	50	2,425	1,800	7,350	Continuing	TBD
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE				PROJECT
07 - Operational System Development		0101113F B-52 SQUADRONS				4810
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Subtotals</u>						<u>Total</u>
Subtotal Product Development		26,670	26,909	31,450	19,619	TBD
Subtotal Support and Management		1,138	6,291	4,357	6,228	TBD
Subtotal Test and Evaluation		50	2,425	1,800	7,350	TBD
Total Project		27,858	35,625	37,607	33,197	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0101113F B-52 SQUADRONS				PROJECT 4875	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4875 Situational Awareness Defensive Improvement	11,806	28,598	22,597	0	0	0	0	0	70,925
<p>(U) <u>A. Mission Description</u> The existing ALR-20A system provides the Electronic Warfare Officer (EWO) with the capability of simultaneously surveying, detecting, and displaying all radio frequency (RF) transmissions within its frequency range. It displays detected signals in a spectrum analyzer like presentation (i.e., in an amplitude versus frequency format) to the EWO on a multi-trace cathode ray tube. The ALR-20A provides the EWO with two capabilities. First, it is the main receiver used for early warning and situational awareness. Second, the analog signals displayed by the ALR-20A are required for the successful employment (i.e., jamming) of the following electronic countermeasures (ECM) systems: ALQ-122/ALQ-16A, ALT-32s, and ALQ-155(V) systems. The present ALR-20A system was designed in the 1960's and is becoming unsupportable due to vanishing vendors and obsolete technology. SADI removes and replaces the ALR-20A panoramic receiver.</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$3,080 Group A kit and NRE (U) \$3,820 Group B kit and NRE (U) \$3,820 Software (U) \$1,086 Program Management (U) \$11,806 Total</p> <p>(U) <u>FY 2002 (\$ in Thousands)</u> (U) \$3,790 Group A kit and NRE (U) \$2,879 Group B kit and NRE (U) \$10,449 Ground/Flight Test (U) \$540 Install (U) \$1,620 Program Management (U) \$1,080 Trainers (U) \$4,550 Support Equipment/NRE (U) \$3,690 Software (U) \$28,598 Total</p>									
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PROJECT

07 - Operational System Development

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(U) A. Mission Description Continued(U) FY 2003 (\$ in Thousands)

(U) \$22,597 Development/Operational Testing

(U) \$22,597 Total

(U) B. Project Change Summary

None.

(U) C. Other Program Funding Summary (\$ in Thousands)

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF RDT&E									
(U) Other APPN				36,700	46,800	23,900	30,000	35,800	173,200

(U) D. Acquisition Strategy

The SADI program will contract with Boeing Wichita for aircraft hardware integration. Lockheed-Martin has been selected to provide EMD hardware. The Government will contract with these vendors for production hardware and aircraft installation support.

(U) E. Schedule Profile

	<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Contract Award	*	*	*	*	*	X	X	X	X			
(U) Interface Development	*	*	*	*	*	X	X	X				
(U) Test Planning	*	*	*	*	*	X	X	X				
(U) Group A Design	*	*	*	*	*	X	X	X				
(U) Group A Fabrication			*	*	*	X	X	X				
(U) Group B Design	*	*	*	*	*	X	X	X				
(U) Group B Fabrication			*	*	*	X	X	X				
(U) DT (2 Qtr FY 02)						X	X	X	X			
(U) OT (2 Qtr FY03)										X	X	X
(U) Program Office Support	*	*	*	*	*	X	X	X	X	X	X	X

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0101113F B-52 SQUADRONS					PROJECT 4875																																																							
<p>(U) <u>E. Schedule Profile Continued</u></p> <table style="width: 100%; border: none;"> <thead> <tr> <th></th> <th colspan="4" style="text-align: center;"><u>FY 2001</u></th> <th></th> <th colspan="4" style="text-align: center;"><u>FY 2002</u></th> <th></th> <th colspan="4" style="text-align: center;"><u>FY 2003</u></th> </tr> <tr> <th></th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> </tr> </thead> <tbody> <tr> <td>* = Complete</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>X = On going</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>													<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>					1	2	3	4	1	2	3	4	1	2	3	4	* = Complete													X = On going												
	<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>																																																						
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT		
07 - Operational System Development				0101113F B-52 SQUADRONS					4875		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
							<u>FY 2001</u>	<u>FY 2002</u>		<u>FY 2003</u>	
(U)	Hardware/NRE						6,900	6,669		3,100	
(U)	Software						3,820	3,690			
(U)	Program management						1,086	1,620		1,262	
(U)	Trainers							1,080		1,110	
(U)	Support Equipment/NRE							4,550		8,310	
(U)	Ground/Flight Test							10,449		7,705	
(U)	Install							540			
(U)	Data									1,110	
(U)	Total						11,806	28,598		22,597	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
<u>Contractor or</u>	<u>Contract</u>										
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>							
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>	
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>	
<u>Product Development Organizations</u>											
Boeing Military Programs,	CPAF	Aug 00	2,793		6,863	10,732	22,255	15,832		55,682	
Wichita Division											
<u>Support and Management Organizations</u>											
OC-ALC/LH	PMA	Jun 00	225	N/A	813	694	900	900		3,307	
WR/ALC	616	Aug 00	98	N/A	98	120	120	120		458	
OO-ALC/YWT			N/A	N/A	110	130	1,080	1,080		2,400	
HQ ACC/XRA52	MORD	Jun 00	10	N/A	10	10	10	10		40	
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BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT
07 - Operational System Development					0101113F B-52 SQUADRONS				4875
(U) <u>Performing Organizations Continued:</u>									
<u>Test and Evaluation Organizations</u>									
36 EWS//EWF	616	Jun 00	10	N/A	10	20	110	110	250
419 FLTS	616	Jun 00	10	N/A	10	50	2,110	2,200	4,370
2LG & 49 TES	616	Jun 00	10	N/A	10	50	2,013	2,345	4,418
(U) <u>Government Furnished Property:</u>									
	<u>Contract</u>								
	<u>Method/Type</u>	<u>Award or</u>							
<u>Item</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
<u>Product Development Property</u>									
<u>Support and Management Property</u>									
<u>Test and Evaluation Property</u>									
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
Subtotal Product Development					6,863	10,732	22,255	15,832	55,682
Subtotal Support and Management					1,031	954	2,110	2,110	6,205
Subtotal Test and Evaluation					30	120	4,233	4,655	9,038
Total Project					7,924	11,806	28,598	22,597	70,925

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